

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	1
PROJECT BROS-173(134)				

\* 00-09118-00-BR

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM  
PROJECT NO. BROS-173(134)  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY  
JOB NO. C-97-070-06

**INDEX OF SHEETS**

- 1 - TITLE SHEET
- 2 - SUMMARY OF QUANTITIES, DETAILS, & TYPICAL SECTIONS
- 3 - PLAN & PROFILE
- 4 - GENERAL PLAN & ELEVATION
- 5 - SUPERSTRUCTURE
- 6 - RAILING
- 7 - ABUTMENTS
- 8 - PIERS
- 9 - PILE DETAILS
- 10 & 11 - CROSS SECTIONS

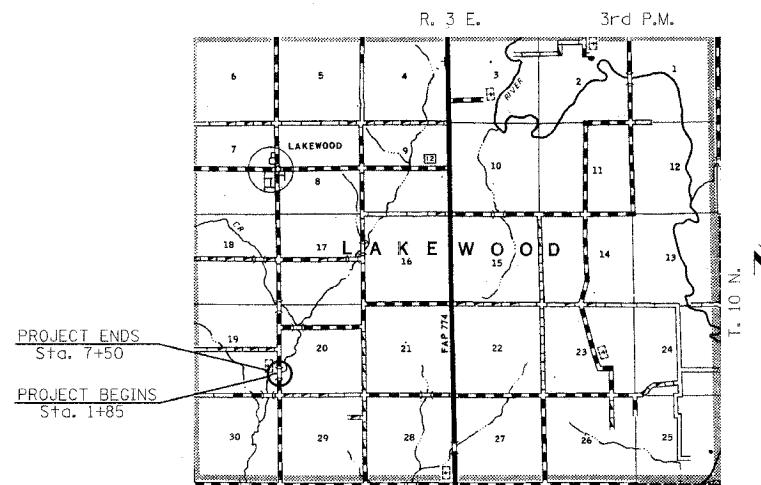
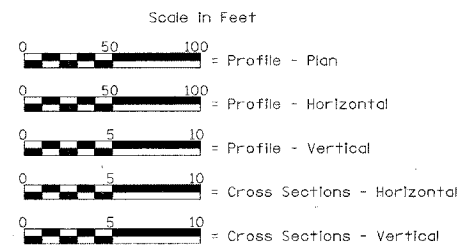
**STANDARDS**

**DESCRIPTION**

STANDARD 000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
STANDARD 280001-02	TEMPORARY EROSION CONTROL SYSTEMS
STANDARD 515001-02	NAME PLATE FOR BRIDGES
STANDARD 635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
STANDARD 702001-06	TRAFFIC CONTROL DEVICES
STANDARD BLR 21-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

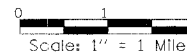
EXISTING STRUCTURE: TWO SPAN TIMBER DECK BRIDGE ON STEEL STRINGERS. CLOSED TIMBER ABUTMENTS AND WINGWALLS, TIMBER PILE BENT PIERS. ±66'-3" BK.-BK. ABUTMENTS, ±21'-0" CLEAR DECK WIDTH. ±0° SKEW. EXISTING STRUCTURE NO. 087-3127

PROPOSED STRUCTURE: THREE SPAN REINFORCED CONCRETE DECK BEAM (17") BRIDGE ON OPEN CONCRETE ABUTMENTS AND SOLID CONCRETE PIERS. 89'-0" BK.-BK. ABUTMENTS, 23'-1/4" (SPANS 1 & 3), 37'-8 3/4" (SPAN 2). 24'-0" CLEAR DECK WIDTH, TYPE S1 RAILING. 10° SKEW RT. FORWARD. PROPOSED STRUCTURE NO. 087-3525

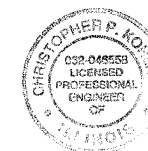


**LOCATION PLAN**

Length of Section - 565.00 Feet = 0.107 Miles



Land Section - 19  
Land Quarter Section - S.E.  
Design Class: Local Road (Non-Urban)  
A.D.T. = 109(2004)  
A.D.T. <=150(2027)  
30 M.P.H. Design Speed



*Christopher P. Kollman* 2/14/06  
EXPIRATION DATE 11/30/07

APPROVED	3-13-06	20.06
<i>S. De...</i> COUNTY ENGINEER		
APPROVED	3-13-06	20.06
<i>Bill...</i> ROAD COMMISSIONER		
PASSED	4/7-06	20.06
<i>Maura E. Castell...</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS		
Released For Bid Based on Limited Review	4/7-06	20.06
<i>Christopher M. Lead...</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER		
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		

TOLL FREE  
"JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS"  
(CALL 1.E.) TELEPHONE NUMBER  
1-800-832-0123

CONTRACT NO. 95467

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	2

PROJECT BROS-173(134)

\* 00-09118-00-BR

SUMMARY OF QUANTITIES

Item	Unit	Quantity
20100110 Tree Removal (6 to 15 Units Diameter)	Unit	53
20100210 Tree Removal (Over 15 Units Diameter)	Unit	140
20200100 Earth Excavation	Cu. Yd.	843
20300100 Channel Excavation	Cu. Yd.	866
* 25000200 Seeding Class 2	Acre	0.7
25000400 Nitrogen Fertilizer Nutrient	Pound	63
25000500 Phosphorus Fertilizer Nutrient	Pound	63
25000600 Potassium Fertilizer Nutrient	Pound	63
* 25100115 Muich, Method 2	Acre	0.7
* 28000250 Temporary Erosion Control Seeding	Pound	100
28000300 Temporary Ditch Checks	Each	4
28000500 Inlet and Pipe Protection	Each	2
28100807 Stone Dumped Riprap, Class A4	Ton	391
28200200 Filter Fabric	Sq. Yd.	610
* 40200800 Aggregate Surface Course, Type B	Ton	518
* 50100100 Removal of Existing Structures	Each	1
50200100 Structure Excavation	Cu. Yd.	114
50300225 Concrete Structures	Cu. Yd.	75.6
50400305 Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2100
50800105 Reinforcement Bars	Pound	5755
50900205 Steel Railing, Type S1	Foot	178
51201000 Furnishing Metal Pile Shells 12"	Foot	644
51202600 Driving and Filling Shells	Foot	644
51203200 Test Pile Metal Shells	Each	3
51500100 Name Plates	Each	1
* 54200220 Pipe Culverts, Class D, Type 1 15"	Foot	80
* 67100100 Mobilization	L. Sum	1
78201000 Terminal Marker - Direct Applied	Each	4
* X5020501 Underwater Structure Excavation Protection - Location 1	Each	1
* X5020502 Underwater Structure Excavation Protection - Location 2	Each	1

\* See Special Provisions

Construction Type Code: X080

GENERAL NOTES

Where section or subsection stones are encountered, the Engineer shall be notified before such stones are removed. The contractor shall protect and preserve all property markers and monuments until the owner, authorized surveyor, or agent has witnessed or referenced their location.

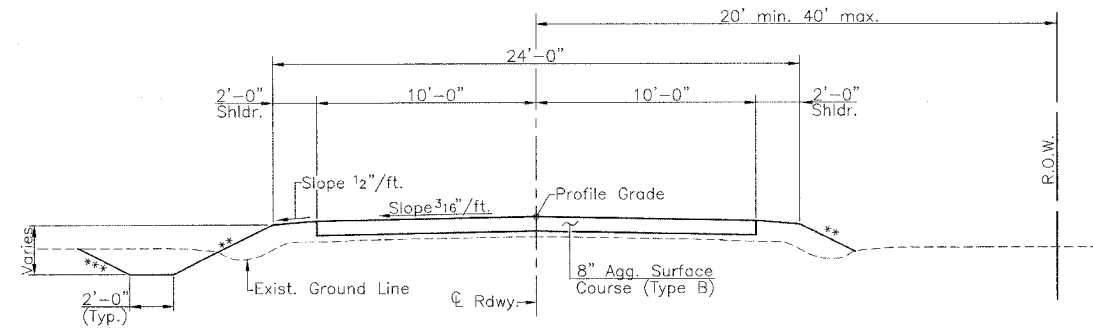
Areas to be seeded shall consist of all disturbed earth surfaces within the right of way as directed by the Engineer.

EARTHWORK SCHEDULE

Location	Earth Excavation	Earth Excavation Adjusted For Shrinkage	Embankment	Earthwork Balance Waste (+) or Shortage (-)
	Cubic Yard	Cubic Yard	Cubic Yard	Cubic Yard
Sta. 1+85 to Sta. 2+00	12	9	6	+3
Sta. 2+00 to Sta. 3+00	174	131	187	-56
Sta. 3+00 to Sta. 3+80	166	125	156	-31
Sta. 3+80 to Sta. 3+91.75	26	19	11	+8
Bridge Omission - Sta. 3+91.75 to Sta. 4+80.75				
Sta. 4+80.75 to Sta. 5+00	4	3	20	-17
Sta. 5+00 to Sta. 6+00	131	98	168	-70
Sta. 6+00 to Sta. 7+00	261	196	121	+75
Sta. 7+00 to Sta. 7+50	69	51	3	+48
Total	843	632	672	-40****

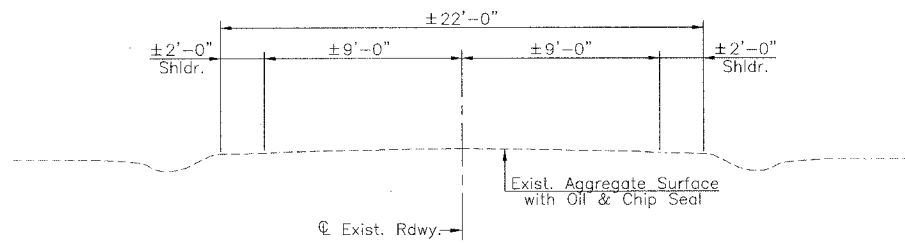
\*\*\*\* No Furnished Excavation will be required. Cost to dispose of Excess Channel, Earth or Structure Excavation shall be included in the contract unit price for Earth Excavation.

SUMMARY OF QUANTITIES  
 DETAILS & TYPICAL SECTIONS  
 T.R. 140 OVER MITCHELL CREEK  
 SECTION 00-09118-00-BR  
 SHELBY COUNTY

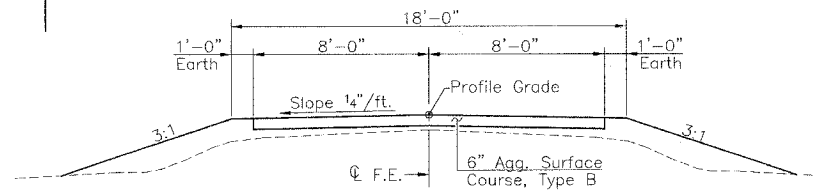


PROPOSED CROSS SECTION

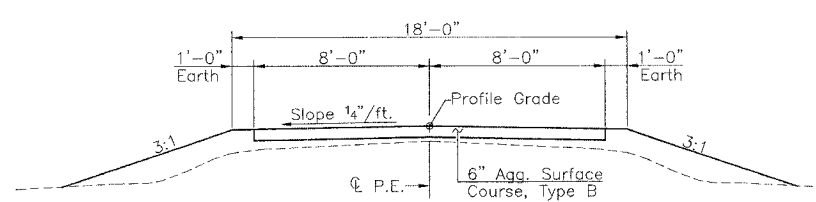
- \*\* 3:1 Fill ≤6'
- 2:1 Fill >6'
- \*\*\* 3:1 Fill ≤10'
- 2:1 Fill >10'



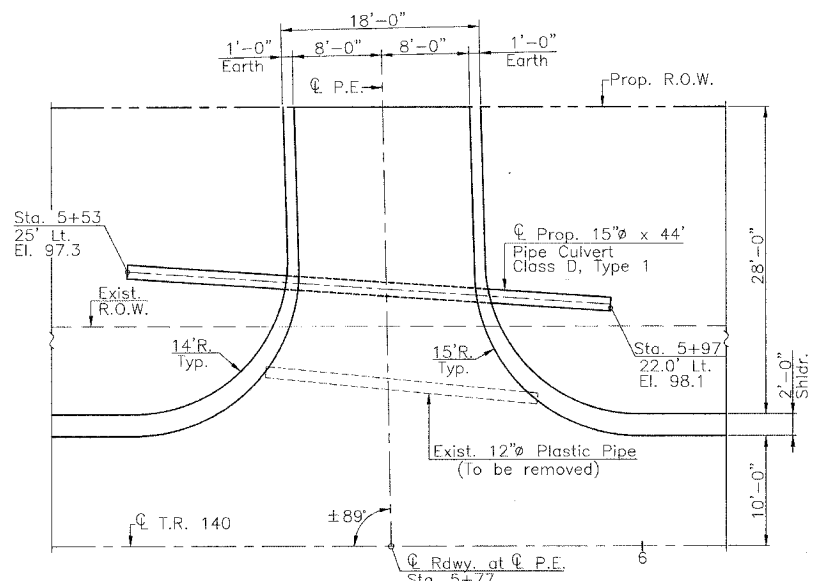
EXISTING CROSS SECTION



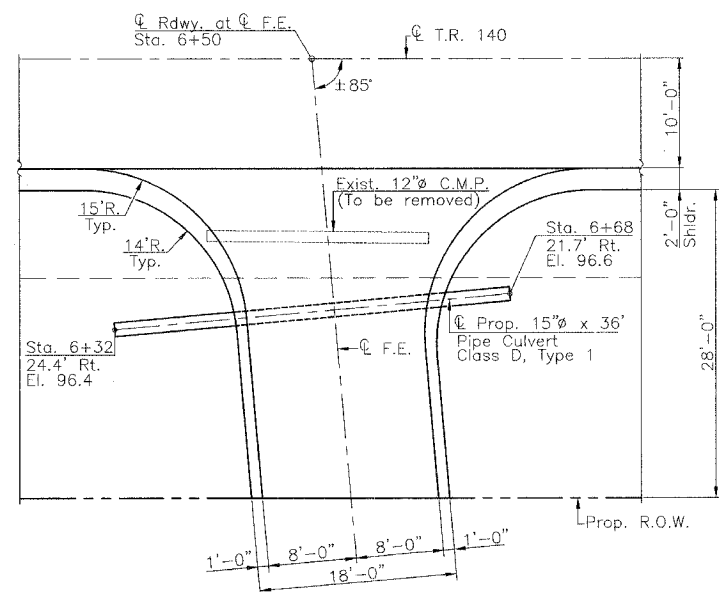
TYPICAL FIELD ENTRANCE  
(Sta. 6+50 Rt.)



TYPICAL PRIVATE ENTRANCE  
(Sta. 5+77 Lt.)



PLAN  
(Private Entrance Sta. 5+77 Lt.)



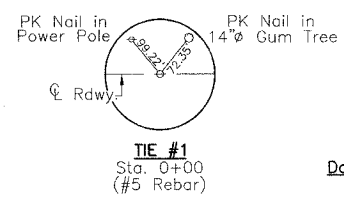
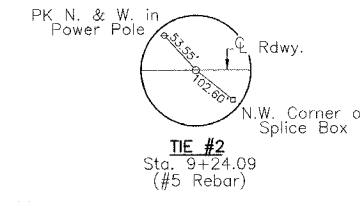
PLAN  
(Field Entrance Sta. 6+50 Rt.)

FILE NAME: SC-1450 (REV. 3/77/06)

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	3

PROJECT BROS-173(134)  
\* 00-09118-00-BR

SEC. 19, T.10 N., R.3 E., 3rd P.M.

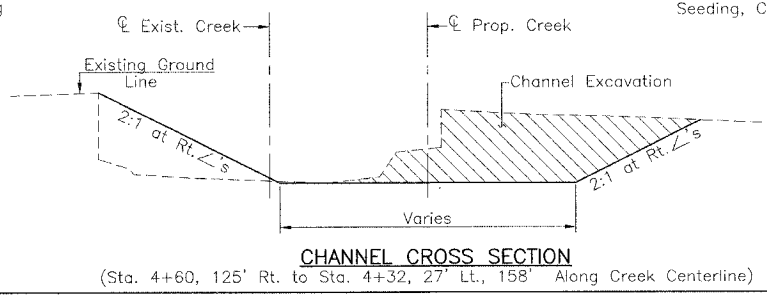
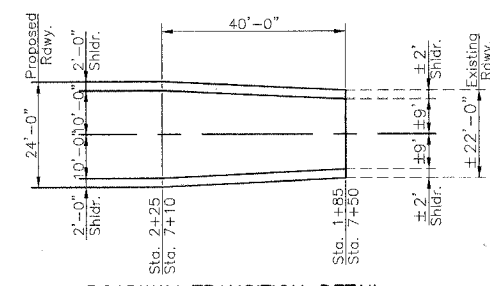
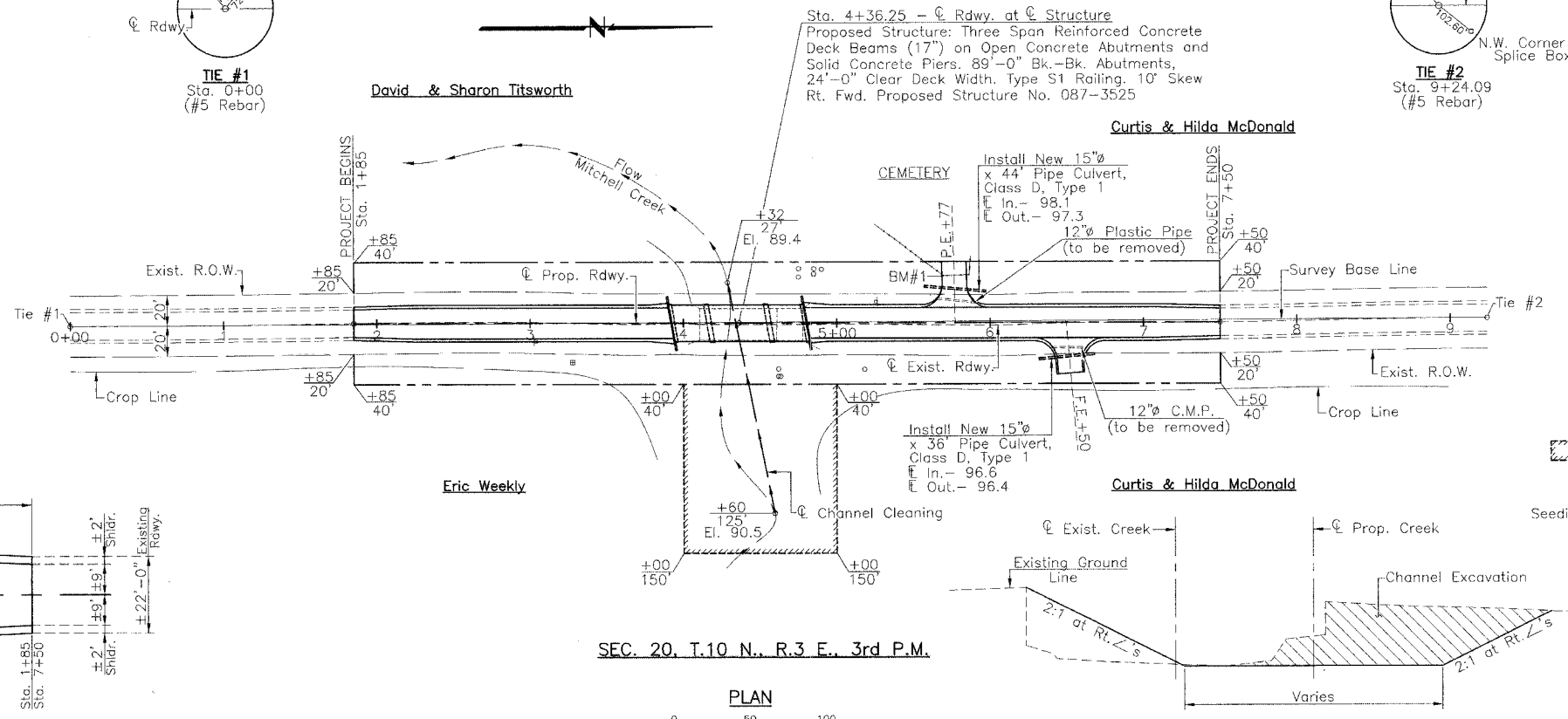


SCHEDULE TREE REMOVAL (OVER 15 UNITS DIAMETER)

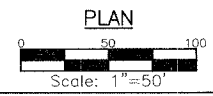
Location	Quantity (Units)
Sta. 4+62 35' Rt.	48
Sta. 4+62 35' Rt.	44
Sta. 5+18 31' Rt.	48
<b>Total</b>	<b>140</b>

SCHEDULE TREE REMOVAL (6 TO 15 UNITS DIAMETER)

Location	Quantity (Units)
Sta. 4+62 30' Rt.	8
Sta. 4+75 35' Lt.	15
Sta. 4+75 30' Lt.	8
Sta. 4+85 30' Lt.	6
Sta. 4+85 32' Lt.	8
Sta. 4+90 35' Lt.	8
<b>Total</b>	<b>53</b>



SEC. 20, T.10 N., R.3 E., 3rd P.M.

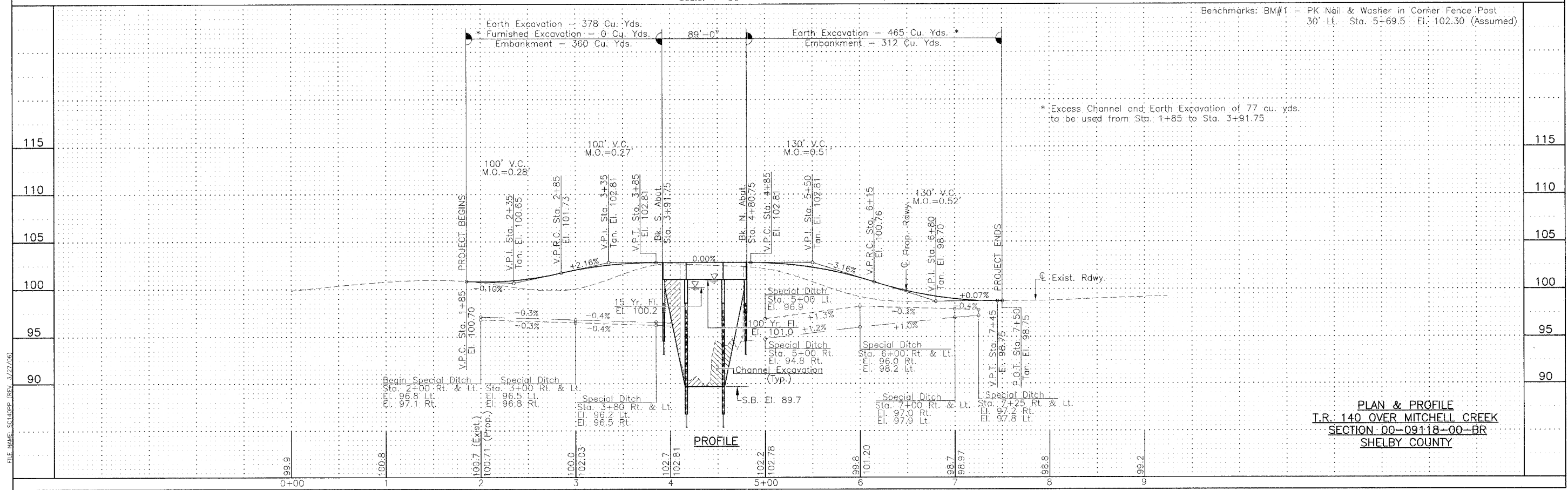


UTILITIES

Shelby Electric Cooperative  
North Route 128  
Shelbyville, Illinois 62565  
Consolidated Communications Inc.  
121 South 17th Street  
Mattoon, Illinois 61938-3915  
1-217-235-3311

Seeding, Class 2 - Sta. 1+85 to Sta. 7+50 R.O.W. to R.O.W. - 0.70 Acre

Denotes Temporary Construction Easement



PLAN & PROFILE  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY

FILE NAME: SCLHOP (REV. 3/22/08)

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	4

PROJECT BROS-173(134)  
\* 00-09118-00-BR

**TOTAL BILL OF MATERIAL**

Item	Super	Sub	Total
Channel Excavation			866
Stone Dumped Riprap, Class A4			391
Filter Fabric For Use With Riprap			610
Removal of Existing Structures			1
Structure Excavation			114
Concrete Structures		75.6	75.6
Precast Prestressed Concrete Deck Beams (17" Depth)	2100		2100
Reinforcement Bars		5755	5755
Steel Railing Type S1		178	178
Furnishing Metal Pile Shells		644	644
Driving and Filling Shells		644	644
Test Pile, Metal Shells		3	3
Name Plates		1	1
Underwater Structure Excavation Protection - Location 1		1	1
Underwater Structure Excavation Protection - Location 2		1	1

**WATERWAY INFORMATION**

Drainage Area = 17.94 Sq. Miles		Low Grade Elev. = 98.75		@ Sta. 7+50		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head-Ft.	Headwater El.
Design	15	1738	510	549	100.2	100.4
Base	100	2684	512	616	101.0	101.6
Exist. Overtop.	8.6	1500				
Prop. Overtop.	9.1	1520				
Max. Calc.	500	3433	512	633	101.4	102.5

**DESIGN STRESSES**

**FIELD UNITS**

f<sub>c</sub> = 1400 psi  
v<sub>c</sub> = 56.2 psi  
f<sub>s</sub> = 24000 psi  
n = 9

**PRECAST PRESTRESSED UNITS**

f'<sub>c</sub> = 5000 psi  
f'<sub>ci</sub> = 4000 psi  
f'<sub>s</sub> = 270000 psi  
f'<sub>si</sub> = 189000 psi  
1/2" Strands

**GENERAL NOTES**

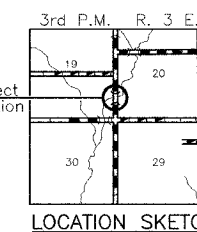
See Proposal for Boring Data.  
Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31, M-42, or M-53, Grade 60.  
The layout of the riprap slopewall may be varied to suit conditions in the field as determined by the engineer.  
The contractor shall drive one test pile in a permanent location at the North abutment and at Piers 1 & 2 as directed by the Engineer in the field prior to ordering the remainder of piles.

**DESIGN SPECIFICATIONS**

2002 A.A.S.H.T.O. Specifications with 2003 & 2004 Interim Specifications.

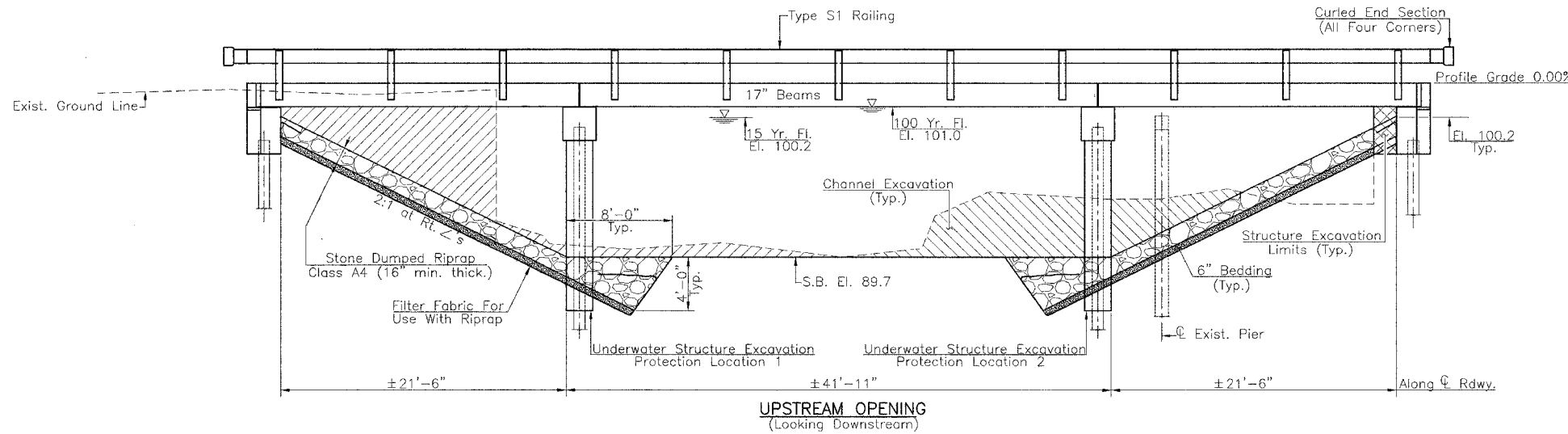
**LOADING HS 20-44**

Allow 50#/sq. ft. for Future Wearing Surface.

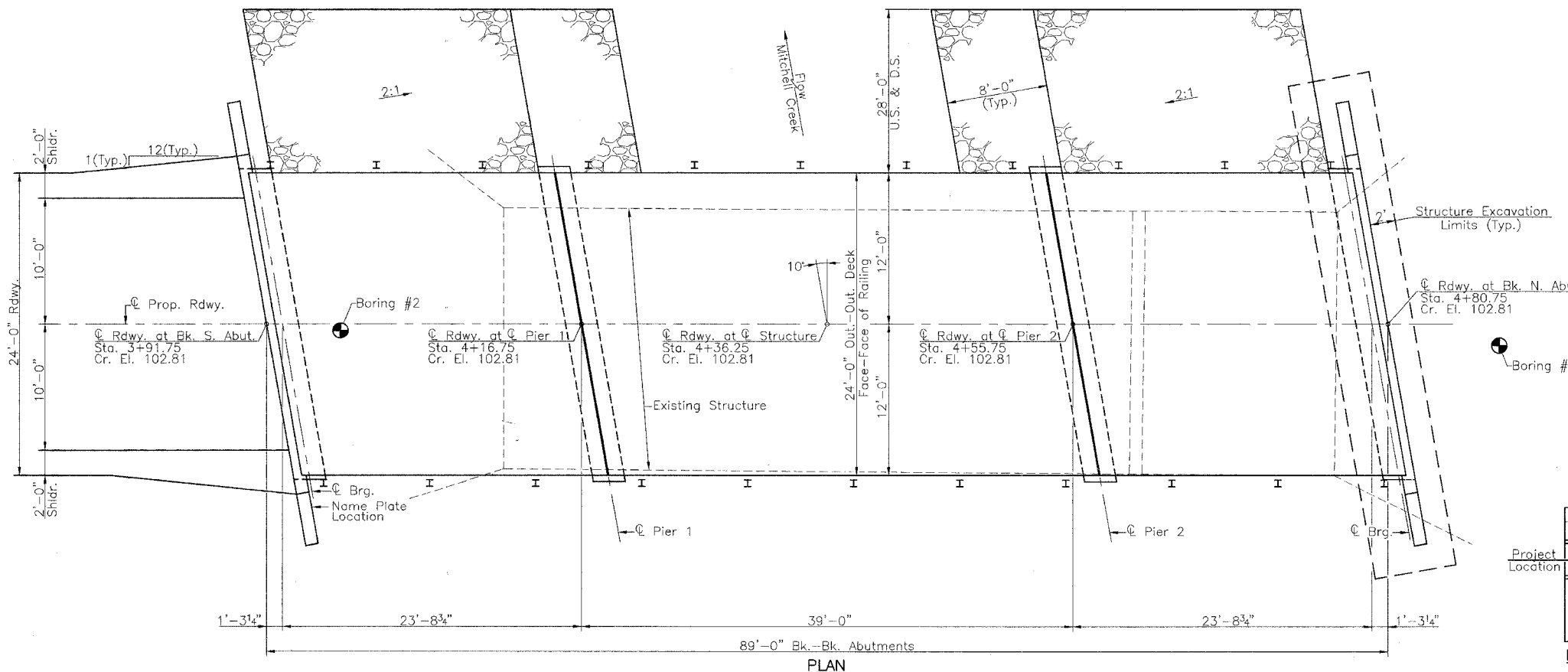


GENERAL PLAN & ELEVATION  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY

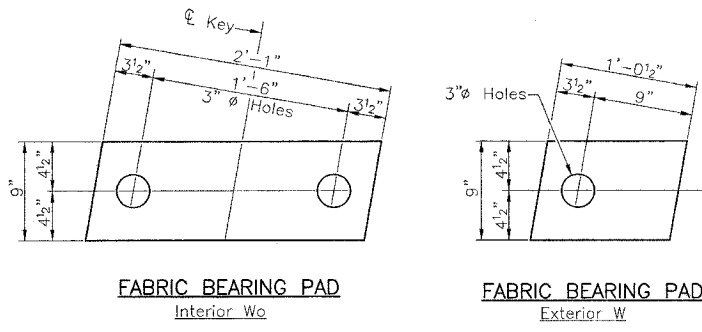
Existing Structure: Two Span Timber Deck on Steel Stringers, Closed Timber Abutments and Wingwalls, Timber Pile Bent Piers, ±66'-3" B.-Bk. Abutments, 21'-0" Clear Deck Width, 0° Skew.  
Benchmarks: BM#1 - PK Nail & Washer in Corner Fence Post 30' Lt. Sta. 5+69.5 El. 102.30 (Assumed)



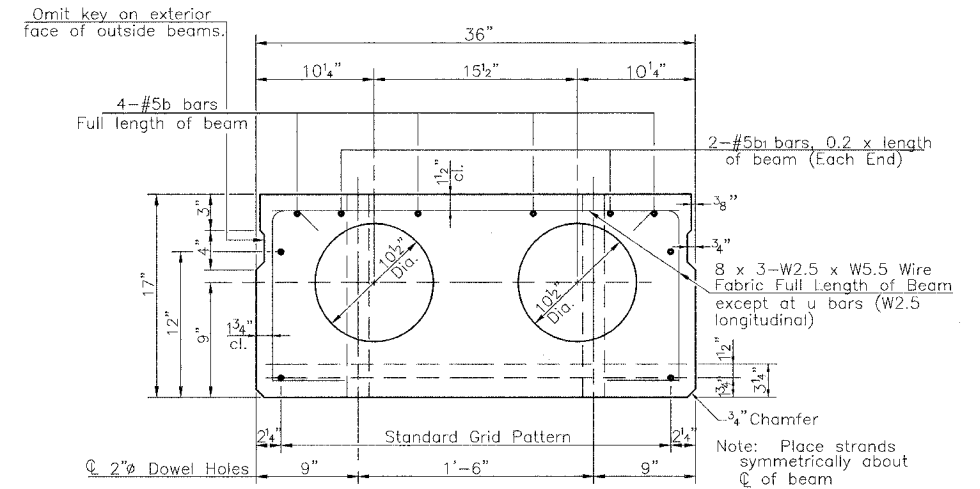
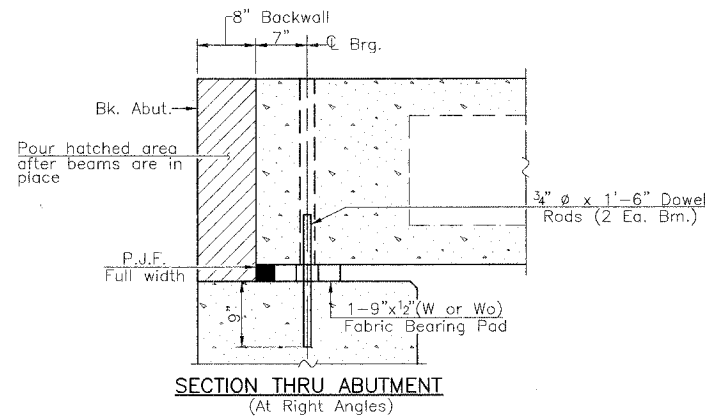
MITCHELL CREEK  
BUILT 200 BY  
SHELBY COUNTY  
SECTION 00-09118-00-BR  
STA. 4+36.25  
PROJECT BROS-173(134)  
STR. NO. 087-3525 LOADING HS20-44  
**NAME PLATE**  
(Standard 515001)



RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	5
PROJECT BROS-173(134)				
* 00-09118-00-BR				

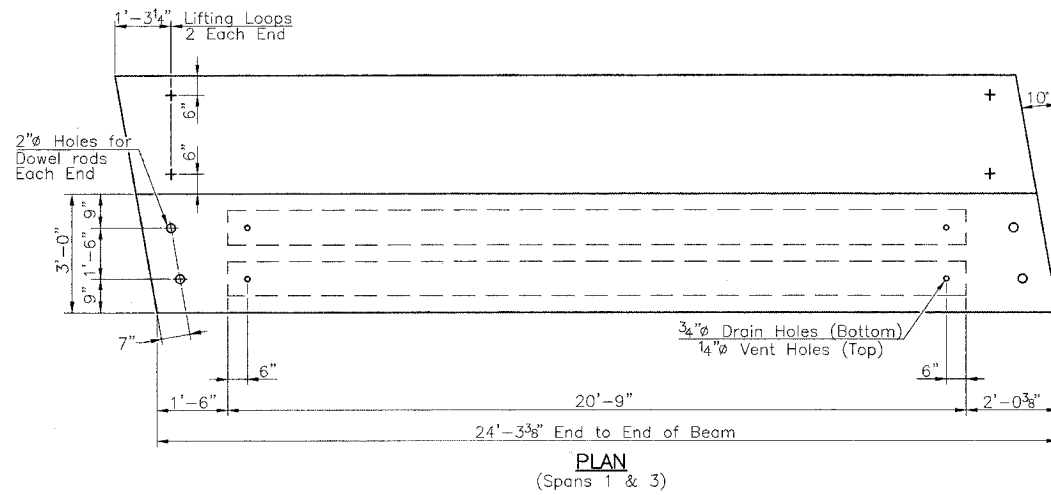


FIXED BEARINGS

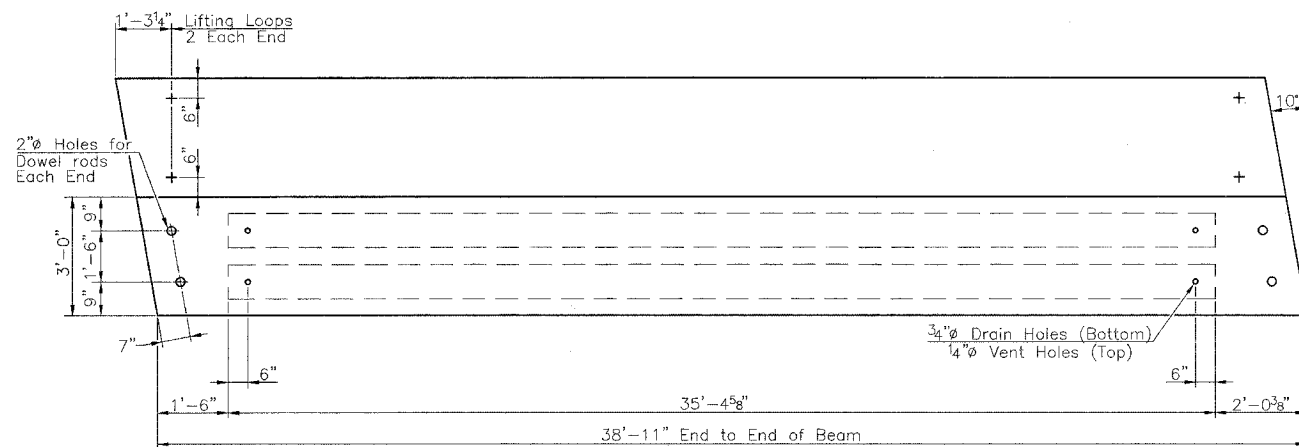


TYPICAL SECTION

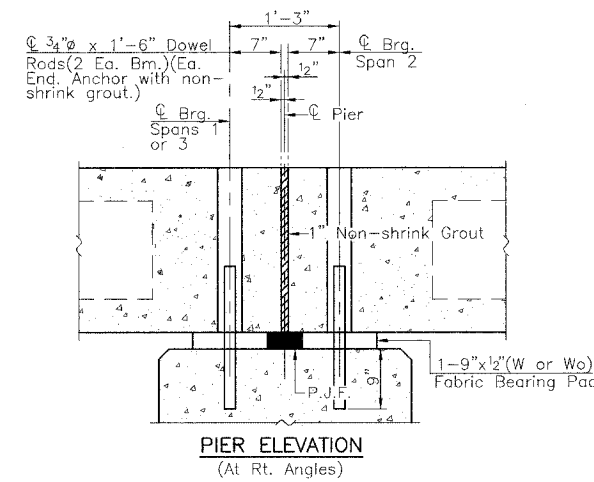
(Spans 1 & 3) 5 - 1/2" Strands, Each Strand Stressed to 28900 Lbs.  
5 Strands - 1 3/4" up  
(Span 2) 14 - 1/2" Strands, Each Strand Stressed to 28900 Lbs.  
10 Strands - 1 3/4" up, 2 Strands 3/4" up, 2 Strands 12" up



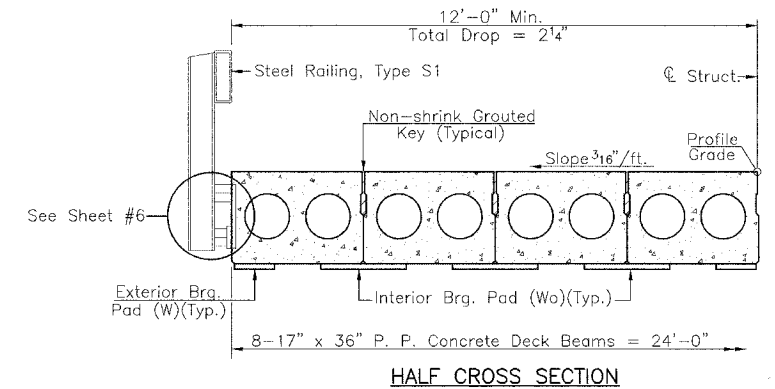
PLAN (Spans 1 & 3)



PLAN (Span 2)



PIER ELEVATION (At Rt. Angles)



HALF CROSS SECTION

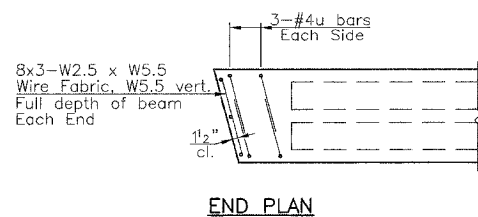
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
Precast Prestressed Concrete Deck Beams (17')		Sq. Ft.	2100	

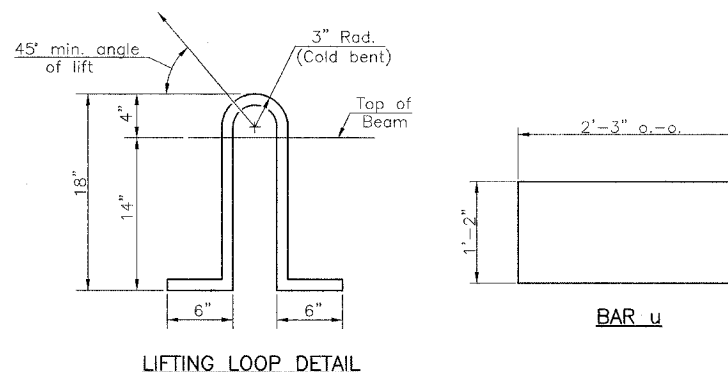
NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
- The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- Lifting loops shall be 2 - 1/2" diameter-270 ksi strands as shown.
- Non-pretressing steel shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.
- The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
- Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beams and the bottom edge of the key.
- Required Release Strength, f'ci, shall be 4000 p.s.i.
- A Corrosion Inhibitor as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.
- Rail Post Anchor Devices shall be cast into the exterior face of outside beams as specified on Sheet No. 6.

SUPERSTRUCTURE  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY



END PLAN



LIFTING LOOP DETAIL

BAR u

FILE NAME: SHELBY (REV. 2/13/06)



RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	7
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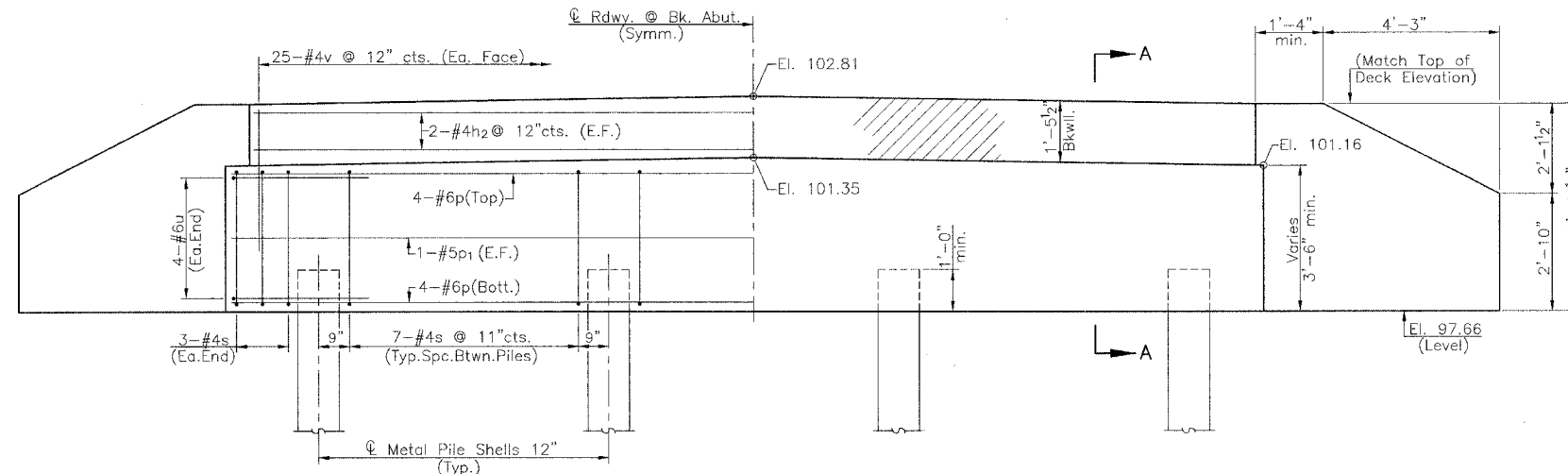
**NOTES**

All exposed edges shall have standard 3/4" chamfer.  
 Space reinforcement in cap to miss beam anchor dowels.  
 Wingwalls and Backwalls may, at the contractor's option, be cast monolithically.

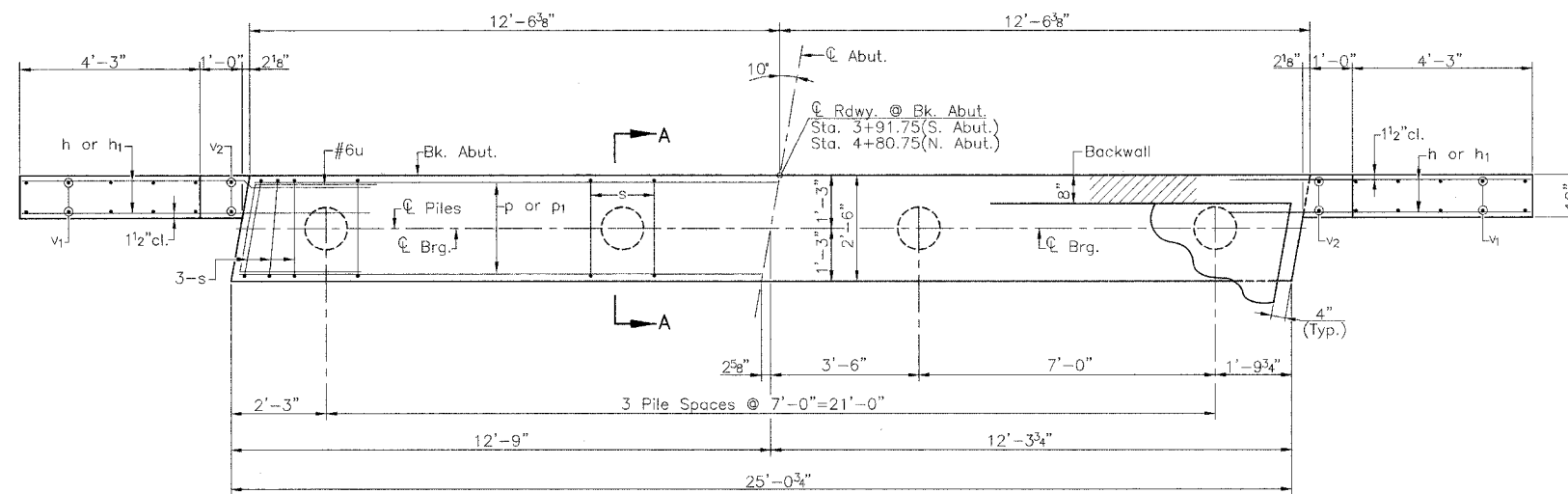
**PILE DATA**

	S. Abut.	N. Abut.
Type:	Metal Shells 12"	Metal Shells 12"
Capacity:	25 Ton	25 Ton
Est. Length:	31'	40'
No. Req'd.:	4	3 + 1 Test Pile

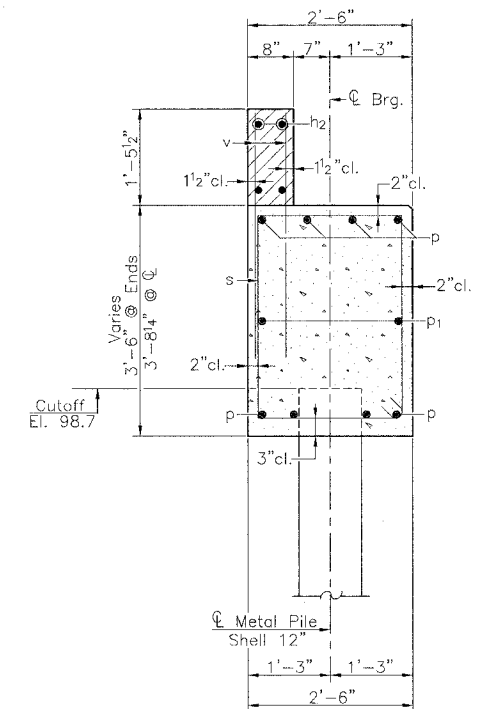
Note: Hatched area and wingwalls shall be poured after deck beams are anchored in place. Quantity for Concrete Structures is included in Bill of Material, this sheet.



**ELEVATION**  
 (S. Abut. Looking South)  
 (N. Abut. Looking North)



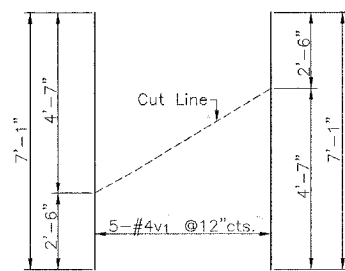
**PLAN**



**SECTION A-A**

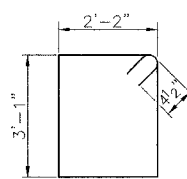
**TWO ABUTMENTS  
 BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE	
h	24	#5	7'-6"	—	
h1	24	#5	5'-0"	—	
h2	8	#4	27'-0"	—	
p	16	#6	24'-8"	—	
p1	4	#5	24'-8"	—	
s	54	#4	11'-3"	□	
u	16	#6	10'-1"	—	
v	100	#4	2'-9"	—	
v1	20	#4	7'-1"	—	
v2	8	#4	4'-7"	—	
Concrete Structures				Cu. Yd.	21.8
Reinforcement Bars				Pound	2105
Furnishing Metal Pile Shells 12"				Foot	244
Driving and Filling Shells				Foot	244
Test Pile, Metal Shells				Each	1
Structure Excavation				Cu. Yd.	76

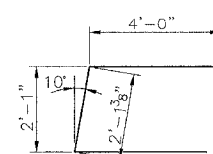


**v1 - BAR CUT DIAGRAM**

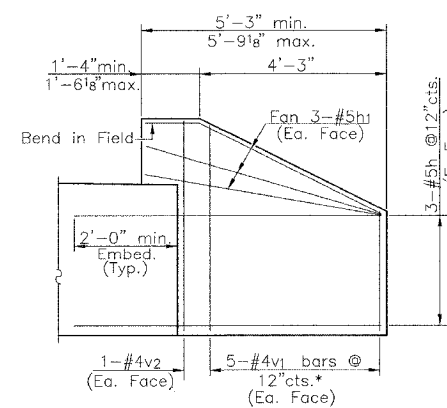
Order v1 bars full length; Lay out in field according to diagram. Cut v1 bars along cut line. Use remainder of each bar in opposite face.



**BAR s**



**BAR u**

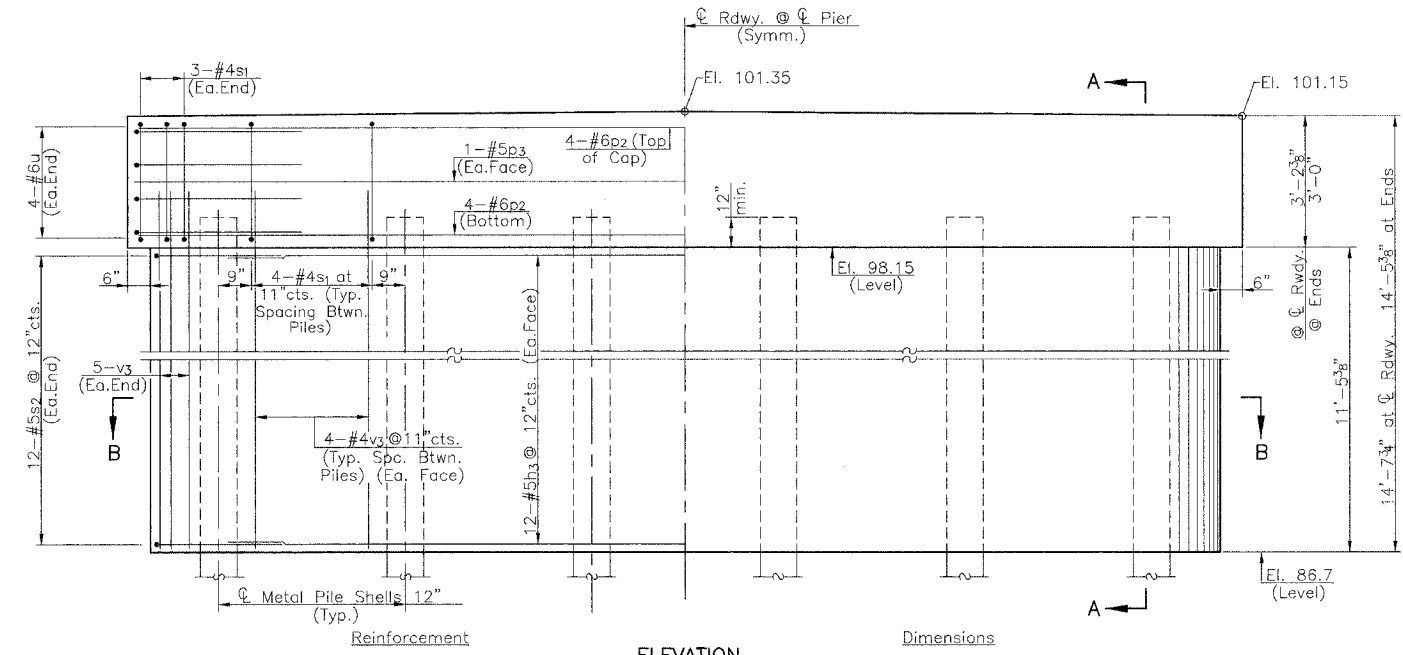


**WINGWALL ELEVATION**

(Showing Reinforcement)

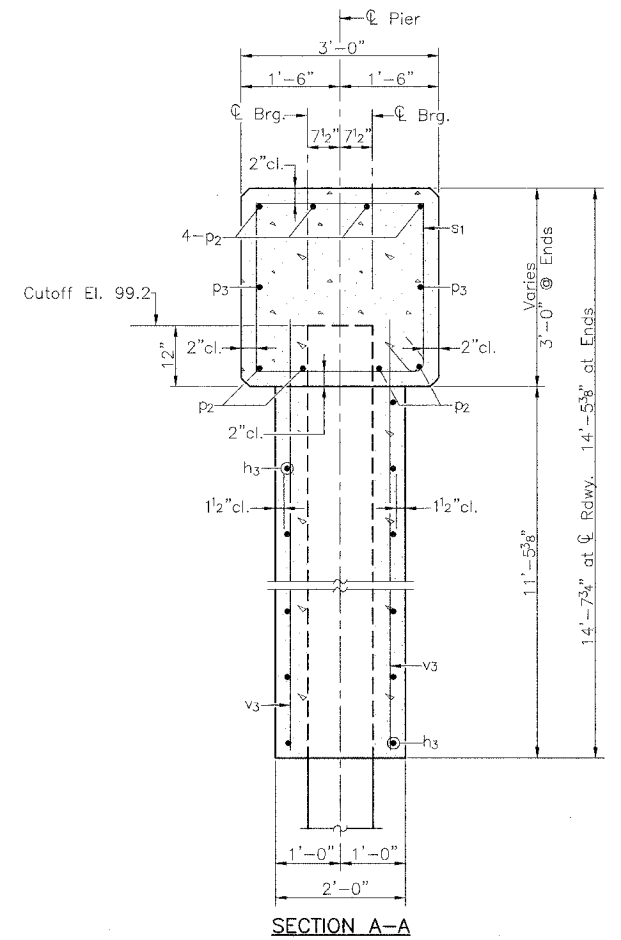
\* See v1-bar cut diagram

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R.140	*	SHELBY	11	8
PROJECT BROS-173(134)				
* 00-09118-00-BR				



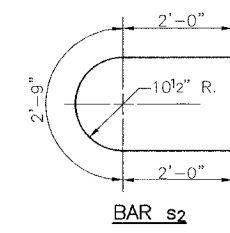
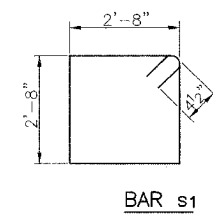
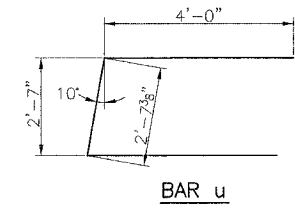
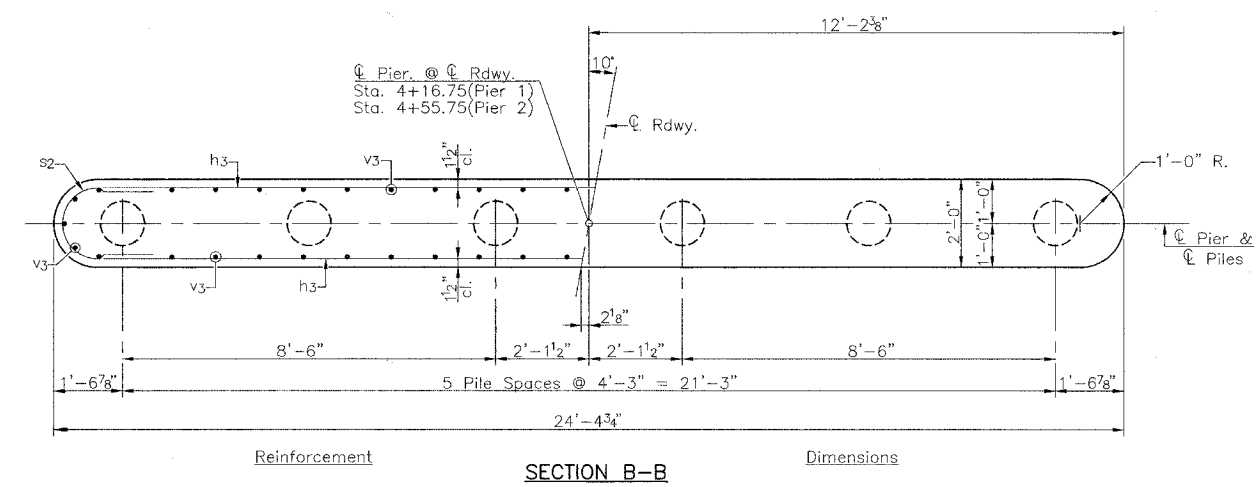
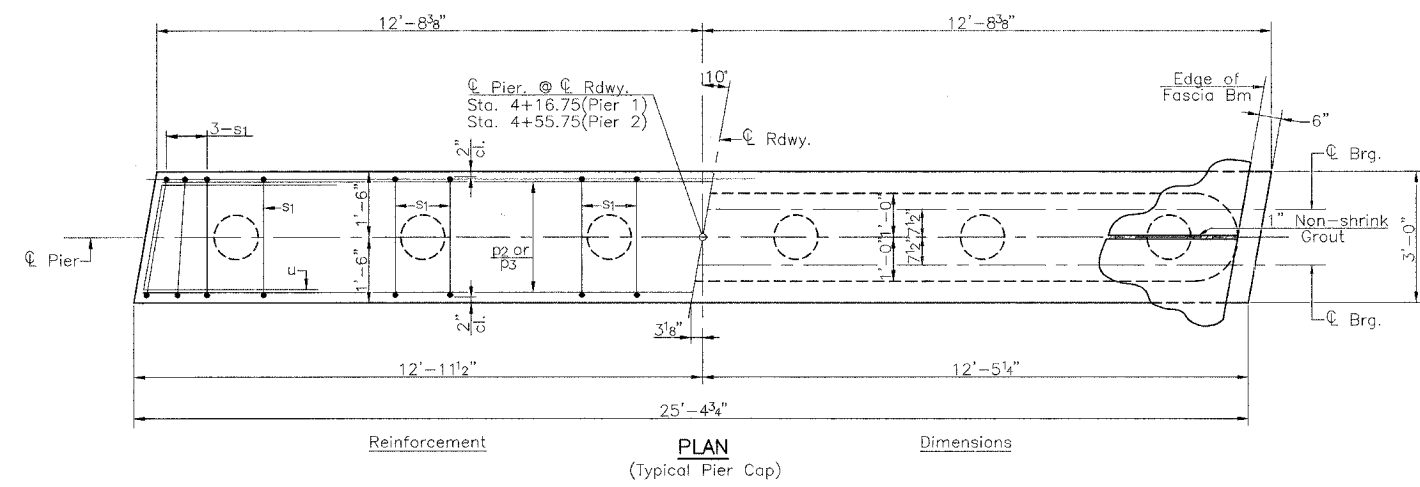
**PILE DATA**

	Pier 1	Pier 2
Type:	Metal Shells 12"	Metal Shells 12"
Capacity:	33 Ton	33 Ton
Est. Length:	33'	47'
No. Req'd:	5+1 Test Pile	5+1 Test Pile



**NOTES**

All exposed concrete edges shall have standard 3/4" chamfer except as noted.  
Space reinforcement in pier caps to miss beam anchor dowels.



**TWO PIERS BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE	
h3	48	#5	22'-4"	—	
P2	16	#6	25'-1"	—	
P3	4	#5	25'-1"	—	
s1	52	#4	11'-5"	□	
s2	48	#5	6'-9"	—	
u	16	#6	10'-8"	—	
v3	100	#4	12'-6"	—	
Concrete Structures				Cu. Yd.	53.8
Reinforcement Bars				Pound	3650
Furnishing Metal Shell Piles				Foot	400
Driving and Filling Piles				Foot	400
Test Pile Metal Shell				Each	2
Underwater Structure Excavation Protection- Location 1 (Pier 1)				Each	1
Underwater Structure Excavation Protection- Location 2 (Pier 2)				Each	1
Structure Excavation				Cu. Yd.	38

**PIERS**  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY

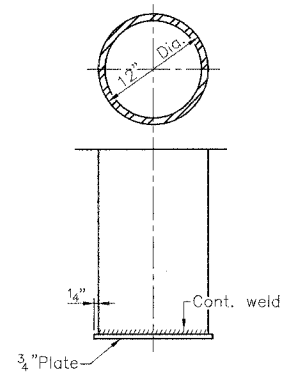
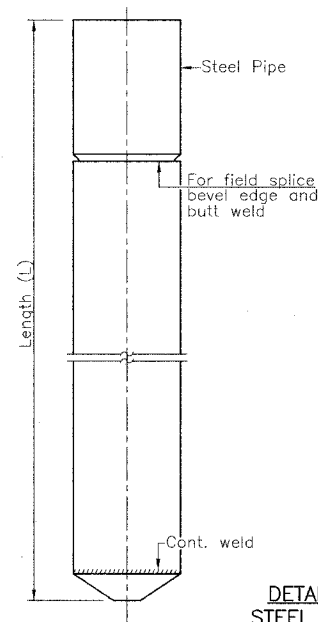


RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	9
PROJECT BROS-173(134)				

\* 00-09118-00-BR

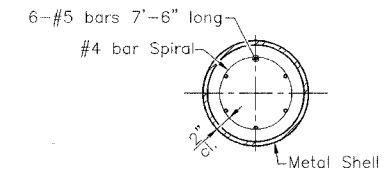
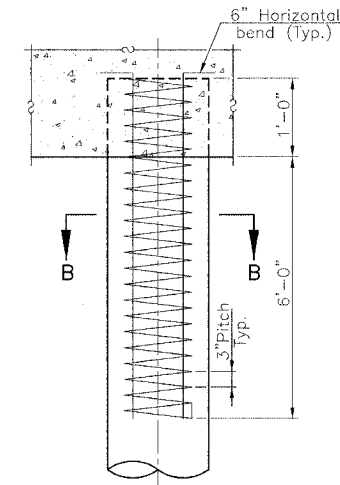
The cost of Reinforcement is incidental to the cost of furnishing piles.

Notes: Driving and bearing ends of pipe shall be cut square.  
 The thickness of the shell shall be 0.2500 inches with a tolerance of 5%.  
 The shell shall be in accordance with Article 1006.05(a) of the Standard Specifications.



OPTIONAL  
FLAT END

DETAIL OF CYLINDRICAL  
STEEL SHELL FOR CAST IN  
PLACE CONCRETE PILES

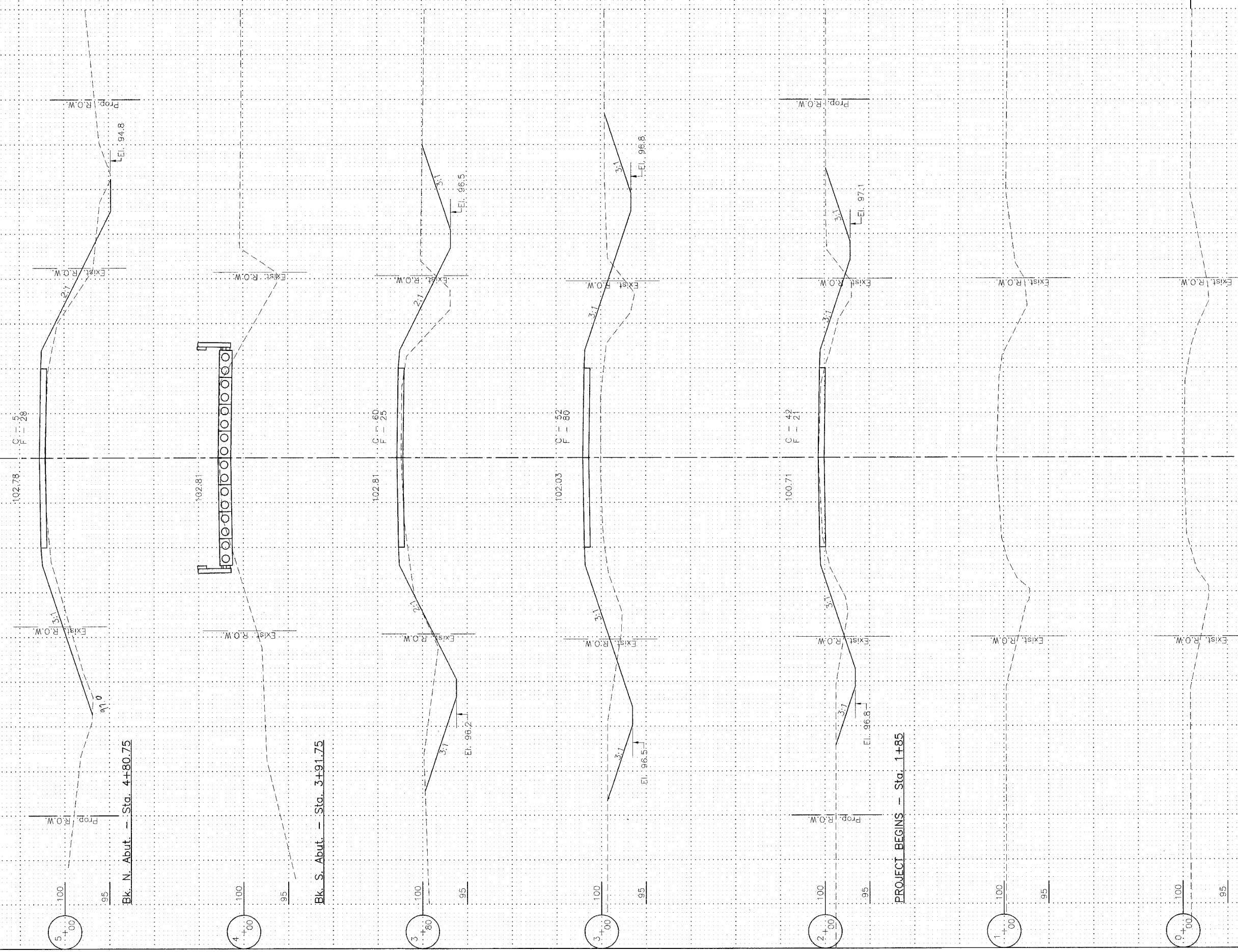


SECTION B-B

DETAIL OF REINFORCEMENT  
FOR METAL SHELLS

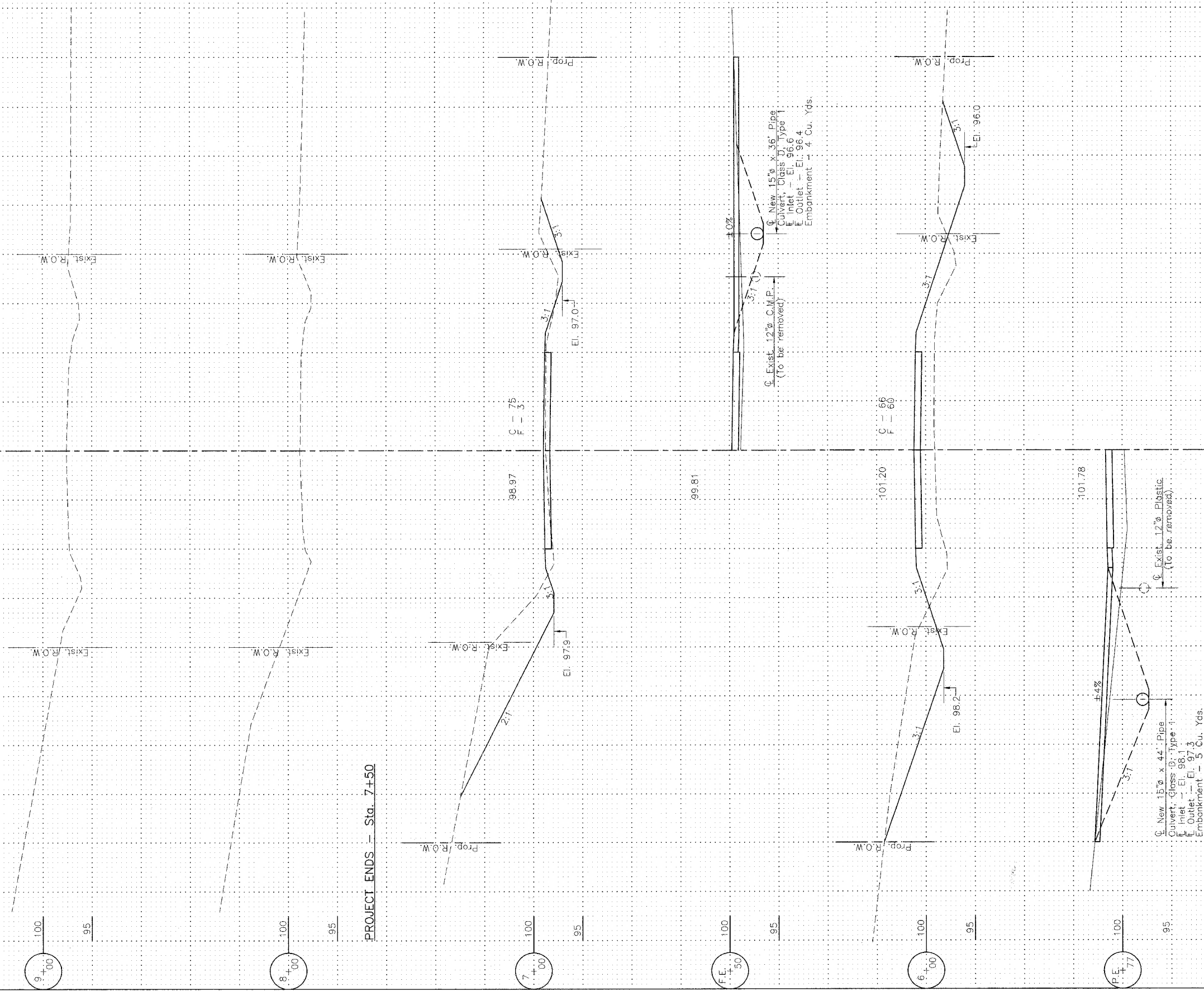
FILE NAME: SCL4002 (REV. 2/13/06)

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	10
PROJECT BROS-173(134)				
* 00-09118-00-BR				



CROSS SECTIONS  
T.R. 140 OVER MITCHELL CREEK  
SECTION 00-09118-00-BR  
SHELBY COUNTY

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 140	*	SHELBY	11	11
PROJECT BROS-173(134)				
* 00-09118-00-BR				



PROJECT ENDS - Sta. 7+50

CROSS SECTIONS  
 T.R. 140 OVER MITCHELL CREEK  
 SECTION 00-09118-00-BR  
 SHELBY COUNTY

50  
40  
30  
20  
10  
0  
10  
20  
30  
40  
50